

*OPHIACANTHA ABYSSA*, NEW SPECIES, AND  
*OPHIOPHTHALMUS DISPLASIA* (CLARK), A SUGGESTED  
NEW COMBINATION IN THE OPHIUROID FAMILY  
OPHIACANTHIDAE (ECHINODERMATA:  
OPHIUROIDEA) FROM OFF  
OREGON, U.S.A.

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*Abstract.*—*Ophiacantha abyssa*, a new species of ophiacanthid ophiuroid from abyssal waters off Oregon is described. It is distinguished by a proliferation of oral papillae and aboral arm plates and oral shields bearing spines. *Ophiacantha diplasia* (Clark, 1911) is placed in the ophiacanthid genus *Ophiophthalmus*.

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An extensive benthic faunal sampling program by Dr. A. G. Carey, Jr. of Oregon State University has produced a large collection of echinoderms. Material from the abyssal regions included 32 specimens of an undescribed ophiacanthid ophiuroid. These collections also contained 43 specimens of *Ophiacantha diplasia*. Using Carey's material and Clark's (1911) type-specimen, it was found that *O. diplasia* properly belongs in the genus *Ophiophthalmus* Matsumoto, 1917.

Suborder Laemophiurina Matsumoto, 1915

Family Ophiacanthidae Perrier, 1891

*Ophiacantha abyssa*, new species

Figs. 1, 2

*Material examined.*—Oregon State University, School of Oceanography samples from Tufts Abyssal Plain: OTB 104, 40°12.7'N, 126°30.3'W, 4260 m, 14 January 1966, 9 specimens; OTB 163, 44°43.2'N, 134°44.6'W, 3860 m, 1 March 1967, 2 specimens; OTB 164, 44°37.4'N, 133°39.8'W, 3699 m, 4 March 1967, 2 specimens; OTB 331, 44°40.9'N, 133°31.9'W, 3717 m, 4 June 1970, 5 specimens; OTB 334, 44°31.1'N, 134°43.8'W, 3858 m, 5 June 1970, holotype (USNM E27316), 2 paratypes (USNM E27317); BMT 228, 44°45.7'N, 134°23.8'W, 3354 m, 20 May 1970, 7 specimens; BMT 230, 44°25.8'N, 132°13.4'W, 3655 m, 1 June 1970, 2 specimens (all material except types is in author's possession or at Oregon State University).

*Etymology.*—*abyssos* (Greek)—bottomless, referring to the abyssal occurrence of the species.

*Description.*—Disc diameter 18 mm; arm length approximately 80 mm. Disc circular, covered with skin bearing thorny stumps. Radial shields completely covered with thorny stumps, conspicuous as raised areas. Oral interbranchial spaces nearly covered with thorny stumps as on disc. Genital slits large, conspicuous. Oral shields pentagonal, wider than long, center concave, distal edge bearing a varying number of thorny stumps or short spines as on disc. Adoral plates curved, inconspicuous. Oral papillae highly variable, in one to several rows on each side of jaw.



Fig. 1. *Ophiacantha abyssa*: Aboral view.

Aboral arm plates obtusely triangular with distal edges rounded; significantly broader than long. Basal plates well separated. First 3 or more plates bear thorny stumps on distal edges. All ventral arm plates with small tubercles or a swelling in center. First ventral arm plates wider than long with rounded distal edges and truncate proximal sides. Lateral arm plates large, meeting above and below, separating aboral and oral arm plates. Each side arm plate with 8 smooth or slightly serrate stout spines. Tentacle spines single, basal scales broad at base





Fig. 2. *Ophiacantha abyssa*: Oral view.

with pointed tip, distal scales spiniform. Color in life rust-red with black-appearing oral papillae.

*Distribution*.—Northeast Pacific abyssal regions of the Gorda Ridge and Tufts Abyssal Plain off Oregon and northern California, 3354 to 4260 m.

*Discussion*.—*Ophiacantha abyssa* is distinguished from most other members of the genus by the proliferation of oral papillae and the occurrence of spines on the distal edges of the aboral arm plates and the oral shields. *Ophiacantha spec-*

*tablis* Sars and *O. anomala* Sars resemble *O. abyssa* in possessing a proliferation of oral papillae on the oral and adoral plates. However, thorny spines do not occur on the aboral arm plates of *O. spectabilis* or on the oral shields of *O. anomala*. Several additional differences exist including the smoothness of the arm spines, the shape and smooth texture of the tentacle scales, and the differing shape of aboral arm plates in *O. anomala* and *O. spectabilis*. In addition, the distribution of these two species is restricted to the eastern Atlantic above 2000 m (D'yakonov 1967, Mortensen 1933), while *O. abyssa* occurs in the Northeast Pacific below 3300 m.

*Ophiophthalmus diplasia* (Clark), new combination

*Ophiacantha diplasia* Clark 1911:209.

*Discussion*.—After examining Clark's (1911) type (USNM 25647) and 43 specimens from a wide range of locations off Oregon, it is suggested that *Ophiacantha diplasia* be placed in the genus *Ophiophthalmus*. This species possesses short and rounded radial shields that have the distal one third exposed in contrast to the elongate rectangular shields that are completely covered with skin typical in *Ophiacantha*. The disc is covered with definite flat scales bearing sparse coarse spherical granules instead of skin bearing thorny stumps or spines as in *Ophiacantha*. The large, flat tentacle scales and long, smooth glassy arm spines are also characteristic of *Ophiophthalmus* rather than *Ophiacantha*. Arm spines in *Ophiacantha* typically approximate dorsally on proximal arm segments. Arm spines do not approximate in any of the 43 specimens from Oregon or in Clark's type-specimen.

Acknowledgments

I am grateful to Dr. David Pawson, Curator, Division of Echinoderms, U.S. National Museum of Natural History, for his helpful review of an earlier version of this paper, and to Dr. A. G. Carey, Jr. for his support and patience during the preparation of this article. Partial support was generously provided by the U.S. Atomic Energy Commission (contract AT (45-1) 2227 Task Agreement no. 12).

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